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27530 7590 11/13/2009

Nelson Mullins Riley & Scarborough LLP  
IP Department  
100 North Tryon Street  
42nd Floor  
Charlotte, NC 28202-4000

EXAMINER

PRYOR, ALTON NATHANIEL

ART UNIT

PAPER NUMBER

1616

DATE MAILED: 11/13/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,677	01/04/2002	Stephen Brian Falder	16644/09003CIP	9699
TITLE OF INVENTION: ANTI-MICROBIAL COMPOSITION				

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	02/16/2010

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

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27530 7590 11/13/2009

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,677	01/04/2002	Stephen Brian Falder	16644/09003CIP	9699

TITLE OF INVENTION: ANTI-MICROBIAL COMPOSITION

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	02/16/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
PRYOR, ALTON NATHANIEL	1616	424-405000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/039,677	01/04/2002	Stephen Brian Falder	16644/09003CIP	9699
27530	7590	11/13/2009	EXAMINER	
Nelson Mullins Riley & Scarborough LLP IP Department 100 North Tryon Street 42nd Floor Charlotte, NC 28202-4000			PRYOR, ALTON NATHANIEL	
			ART UNIT	PAPER NUMBER
			1616	
			DATE MAILED: 11/13/2009	

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 104 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 104 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/039,677	FALDER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ALTON N. PRYOR	1616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/31/09;11/12/08;7/16/08;1/16/07.
2. ☒ The allowed claim(s) is/are 1,46,52,53,61,62,70,71,78,82-85,88-92,95-100,105-107,111-113,115-137 (claims renumbered 1-53 respectively).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
|---|---|

/Alton N. Pryor/  
Primary Examiner, Art Unit 1616

Art Unit: 1616

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ms. Andrighetti on 10/8/09.

The application has been amended as follows:

The claim version below replaces all previous claim versions.

### **Claims**

1. An anti-microbial composition consisting essentially of:

- (i) at least one anti-microbial agent, wherein at least one of the anti-microbial agents is an anti-microbial agent having a high surface tension of from 20 to 35 mN/m, and is selected from the group consisting of (a) a quarternary ammonium compound having the general formula  $R^1R^2R^3R^4N^+X^-$ , in which one or two of the R groups are alkyl substituted by aryl or interrupted by aryl or oxygen and the other R groups are the same or different and are C<sub>1</sub> to C<sub>4</sub> alkyl groups, (b) a dialkyldimethylammonium compound wherein the two non-methyl alkyl groups are selected from alkyl groups comprising from 8 to 12 carbon atoms, and (c) a benzalkonium halide or an aryl ring substituted benzalkonium halide,
- (ii) ~~at least one~~ a compound having a low surface tension of from 8 to 14 mN/m, and selected from the group consisting of silanes, soya lecithins,

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polydimethylsiloxanes, and polydimethylhydroxysiloxanes, ~~and mixtures thereof,~~  
and

(iii) at least one polar solvent, wherein in use the anti-microbial composition acts substantially to reduce or control the formation of microbial colonies on or at a surface to which the composition is applied.

2. – 45. (canceled).

46. An anti-microbial composition according to Claim 1, wherein the low surface tension of the ~~at least one~~ compound (ii) is 10 mN/m.

47 – 51. (canceled).

52. An anti-microbial composition according to Claim 1, wherein at least one of the anti-microbial agents is of a polar nature.

53. An anti-microbial composition according to Claim 1, comprising the at least one anti-microbial agent selected from bacteriocidal, fungicidal, algicidal, yeasticidal and moldicidal agents.

54. – 60. (canceled).

61. An anti-microbial composition according to Claim 1, wherein the at least one ~~of the~~ anti-microbial agents is selected from benzenemethanaminium N-dodecyl-N,N-dimethylchloride, and benzyl-C<sub>12</sub>-C<sub>16</sub>-alkyldimethyl-ammoniumchloride.

62. An anti-microbial composition according to Claim 1, wherein the at least one ~~of the~~ anti-microbial agents is selected from an amphoteric compound,

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an iodophore, a phenolic compound, a quaternary ammonium compound, a hypochlorite and a nitrogen based heterocyclic compound.

63. – 69. (canceled).

70. An anti-microbial composition according to Claim 62, wherein the ~~or~~ ~~each~~ phenolic compound is selected from a methyl, ethyl, butyl, halo and aryl substituted phenol.

71. An anti-microbial composition according to Claim 62, wherein the compound is selected from 2-phenylphenol, 2-benzyl-4-chlorophenol, 2-cyclopentanol-4-chlorophenol, 4-t-amylphenol, 4-t-butylphenol, 4-chloro-2-pentylphenol, 6-chloro-2-pentylphenol, p-chlorometa-xlenol, 2,4,4-trichloro-2-hydroxydiphenol, thymol, 2-i-propyl-3-methylphenol, chlorothymol, 3-methyl-4-chlorophenol, 2,6-dichloro-4-n-alkyl phenols, 2,4-dichloro-meta-xlenol, 2,4,6-trichlorophenol and 2-benzyl-4-chlorophenol.

72. – 77. (canceled).

78. A composition according to Claim 1, wherein the at least one ~~of the~~ anti-microbial agents is selected from benzenemethanaminium N-dodecyl-N,N-dimethylchloride, and benzyl-C<sub>12</sub>-C<sub>16</sub>-alkyldimethyl-ammoniumchloride, and at least one additional anti-microbial agent is selected from 2-phenylphenol, 2-octyl-2H-isothiazol-3-one, 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one.

79. – 81. (canceled).

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82. An anti-microbial composition according to Claim 1, comprising from 1 to 4% by volume of the ~~at least one~~ compound (ii).

83. An anti-microbial composition according to Claim 1, wherein the at least one polar solvent is selected from water, an alcohol, an ester, a hydroxyl or glycol ester, a polyol, a ketone, and mixtures thereof.

84. An anti-microbial composition according to Claim 1, wherein the at least one polar solvent is selected from n-propanol, water, isopropanol, diethylene glycol and dipropylene glycol.

85. An anti-microbial composition according to Claim 1, comprising from 1 to 70% by volume of the at least one polar solvent.

86. – 87. (canceled)

88. A formulation comprising the anti-microbial composition according to Claim 1, and a functional material.

89. A formulation according to Claim 88, wherein the functional material is selected from plastics, fibres, coatings, films, laminates, adhesives, sealants, clays, china, ceramics, concrete, sand, paints, varnishes, lacquers, cleaning agents and settable or curable compositions such as fillers, grouts, mastics and putties.

90. A formulation according to Claim 88, wherein the formulation comprises from 0.1 to 5.0% by weight of the anti-microbial composition.

91. A formulation according to Claim 88, wherein the formulation comprises from 0.5 to 2.0% by weight of the anti-microbial composition.



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92. A method of reducing or controlling the formulation of colonies of microorganisms on a surface, which method comprises applying the anti-microbial composition according to Claim 1 to the surface.

93. – 94. (canceled)

95. A method of reducing or controlling the formulation of colonies of microorganisms on a the surface, which method comprises applying the formulation of Claim 88 to the surface.

96. A method of reducing or controlling the formulation of colonies of microorganisms on a the surface, which method comprises applying the formulation of Claim 89 to the surface.

97. A method of reducing or controlling the formulation of colonies of microorganisms on a the surface, which method comprises applying the formulation of Claim 90 to the surface.

98. A method of reducing or controlling the formulation of colonies of microorganisms on a the surface, which method comprises applying the formulation of Claim 91 to the surface.

99. A method of manufacturing ~~an~~ the anti-microbial composition according to Claim 1, the method comprising the steps of (a) mixing the ~~anti-microbial agent and any additional~~ anti-microbial agents together, (b) adding the ~~at least one~~ compound (ii) to the anti-microbial agent(s), (c) adding the at least one polar solvent to the mixture of the at least one compound (ii) and anti-

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microbial agent(s) and (d) agitating the resulting mixture until a clear solution is formed.

100. A method of manufacturing a formulation comprising the step of adding the anti-microbial composition of Claim 1 to a functional material.

101. – 104. (canceled).

105. An anti-microbial composition according to Claim 1, wherein the ~~at least one~~ compound (ii) is selected from polydimethylsiloxanes[,] and polydimethylhydrosiloxanes ~~and mixtures thereof~~.

106. An anti-microbial composition containing as a solvent a polar solvent which is selected from the group consisting of water, at least one alcohol, at least one glycol ester, at least one polyol, at least one ketone or a mixture thereof, and comprising:

(i) at least one anti-microbial agent, wherein at least one of the anti-microbial agents is an anti-microbial agent having a high surface tension of from 20 to 35 mN/m and selected from the group consisting of (a) a quaternary ammonium compound having the general formula  $R^1R^2R^3R^4N^+X^-$ , in which one or two of the R groups are alkyl substituted by aryl or interrupted by aryl or oxygen and the other R groups are the same or different and are C<sub>1</sub> to C<sub>4</sub> alkyl groups, (b) a dialkyldimethylammonium compound wherein the two non-methyl alkyl groups are selected from medium and long chain alkyl groups comprising from 8 to 12 carbon atoms, and (c) a benzalkonium halide or an aryl ring substituted benzalkonium halide; and

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(ii) ~~at least one~~ a compound having a low surface tension of from 8 to 14 mN/m and selected from the group consisting of silanes, soya lecithins, polydimethylsiloxanes, and polydimethylhydroxysiloxanes, ~~and mixtures thereof~~, wherein in use the anti-microbial composition acts substantially to reduce or control the formation of microbial colonies on or at a surface to which the composition is applied.

107. An anti-microbial composition according to Claim 106, wherein the low surface tension of the ~~at least one~~ compound (ii) is 10 mN/m.

108. - 110. (canceled).

111. An anti-microbial composition according to Claim 106 comprising at least one additional anti-microbial agent.

112. An anti-microbial composition according to Claim 111, wherein the at least one ~~of the~~ anti-microbial agents is of a polar nature.

113. An anti-microbial composition according to Claim 106 comprising the at least one anti-microbial agent selected from bacteriocidal, fungicidal, algicidal, yeasticidal and moldicidal agents.

114. (canceled).

115. An anti-microbial composition according to Claim 106, wherein the at least one ~~of the~~ anti-microbial agents is selected from benzenemethanaminium N-dodecyl-N,N-dimethylchloride, and benzyl-C<sub>12</sub>-C<sub>16</sub>-alkyldimethyl-ammoniumchloride.

116. An anti-microbial composition according to Claim 111, wherein the at least one additional anti-microbial agent is selected from amphoteric compounds, iodophores,

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phenolic compounds, quarternary ammonium compounds, hypochlorites and nitrogen-based heterocyclic compounds.

117. An anti-microbial composition according to Claim 116, wherein the ~~or each~~ phenolic compound is selected from a methyl, ethyl, butyl, halo and aryl substituted phenol.

118. An anti-microbial composition according to Claim 116, wherein the ~~or each~~ phenolic compound is selected from 2-phenylphenol, 2-benzyl-4-chlorophenol, 2-cyclopentanol-4-chlorophenol, 4-t-amylphenol, 4-t-butylphenol, 4-chloro-2-pentylphenol, 6-chloro-2-pentylphenol, p-chlorometa-xlenol, 2,4,4-trichloro-2-hydroxydiphenol, thymol, 2-i-propyl-3-methylphenol, chlorothymol, 3-methyl-4-chlorophenol, 2,6-dichloro-4-n-alkyl phenols, 2,4-dichloro-meta-xlenol, 2,4,6-trichlorophenol and 2-benzyl-4-chlorophenol.

119. A composition according to Claim 111, wherein the at least one ~~of the~~ anti-microbial agents is selected from benzenemethanaminium N-dodecyl-N,N-dimethylchloride and benzyl-C<sub>12</sub>-C<sub>16</sub>-alkyldimethyl-ammoniumchloride, and at least one of the additional anti-microbial agents is selected from 2-phenylphenol, 2-octyl-2H-isothiazol-3-one, 5-chloro-2-methyl-2H-isothiazol-3-one, and 2-methyl-2H-isothiazol-3-one.

120. An anti-microbial composition according to Claim 106, comprising from 1 to 4% by volume of the ~~at least one~~ compound (ii).

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121. An anti-microbial composition according to Claim 106, wherein the polar solvent is selected from n-propanol, water, isopropanol, diethylene glycol, dipropylene glycol and mixtures thereof.

122. An anti-microbial composition according to Claim 106, comprising from 1 to 70% by volume of the polar solvent.

123. An anti-microbial composition according to Claim 106, wherein the ~~at least one~~ compound (ii) is selected from polydimethylsiloxanes[.,] and polydimethylhydrosiloxanes ~~and mixtures thereof~~.

124. A formulation comprising the anti-microbial composition according to Claim 106, and a functional material.

125. A formulation according to Claim 124, wherein the functional material is selected from plastics, fibres, coatings, films, laminates, adhesives, sealants, clays, china, ceramics, concrete, sand, paints, varnishes, lacquers, cleaning agents and settable or curable compositions such as fillers, grouts, mastics and putties.

126. A formulation according to Claim 124, wherein the formulation comprises from 0.1 to 5.0% by weight of the anti-microbial composition.

127. A formulation according to Claim 124, wherein the formulation comprises from 0.5 to 2.0% by weight of the anti-microbial composition.

128. A method of reducing or controlling the formulation of colonies of microorganisms on the a-surface, which method comprises applying the anti-microbial composition according to Claim 106 to the surface.

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129. A method of reducing or controlling the formulation of colonies of microorganisms on the ~~a~~-surface, which method comprises applying the formulation of Claim 124 to the surface.

130. A method of reducing or controlling the formulation of colonies of microorganisms on the ~~a~~-surface, which method comprises applying the formulation of Claim 125 to the surface.

131. A method of reducing or controlling the formulation of colonies of microorganisms on the ~~a~~-surface, which method comprises applying the formulation of Claim 126 to the surface.

132. A method of reducing or controlling the formulation of colonies of microorganisms on the ~~a~~-surface, which method comprises applying the formulation of Claim 127 to the surface.

133. A method of manufacturing the ~~an~~ anti-microbial composition according to Claim 106, the method comprising the steps of (a) mixing the ~~or each~~ anti-microbial agents together, (b) adding the ~~at least one~~ compound (ii) to the mixture of step (a), (c) adding the polar solvent to the mixture of step (b), and (d) agitating the resulting mixture until a clear solution is formed.

134. A method of manufacturing a formulation comprising the step of adding the anti-microbial composition of Claim 106 to a functional material.

135. An antimicrobial composition according to claim 105, wherein the compound (ii) is selected from the group consisting of polydimethylsiloxane having a

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chain length of from C<sub>12</sub> to C<sub>20</sub> and polydimethylhydrosiloxane having a chain length of from C<sub>12</sub> to C<sub>20</sub>.

136. An antimicrobial composition according to claim 123, wherein the compound (ii) is selected from the group consisting of polydimethylsiloxane having a chain length of from C<sub>12</sub> to C<sub>20</sub> and polydimethylhydrosiloxane having a chain length of from C<sub>12</sub> to C<sub>20</sub>.

137. An anti-microbial composition consisting essentially of:

(i) at least two anti-microbial agents, wherein at least one of the anti-microbial agents is an anti-microbial agent having a high surface tension of from 20 to 35 mN/m, and is selected from the group consisting of (a) a quarternary ammonium compound having the general formula R<sup>1</sup>R<sup>2</sup>R<sup>3</sup>R<sup>4</sup>N<sup>+</sup>X<sup>-</sup>, in which one or two of the R groups are alkyl substituted by aryl or interrupted by aryl or oxygen and the other R groups are the same or different and are C<sub>1</sub> to C<sub>4</sub> alkyl groups, (b) a dialkyldimethylammonium compound wherein the two non-methyl alkyl groups are selected from alkyl groups comprising from 8 to 12 carbon atoms, and (c) a benzalkonium halide or an aryl ring substituted benzalkonium halide,

(ii) a compound having a low surface tension of from 8 to 14 mN/m, and selected from the group consisting of silanes, soya lecithins, polydimethylsiloxanes, and polydimethylhydroxysiloxanes, and

(iii) a polar solvent, wherein in use the anti-microbial composition acts substantially to reduce or control the formation of microbial colonies on or at a surface to which the composition is applied.—

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Telephonic Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTON N. PRYOR whose telephone number is (571)272-0621. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Alton N. Pryor/



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Primary Examiner, Art Unit 1616